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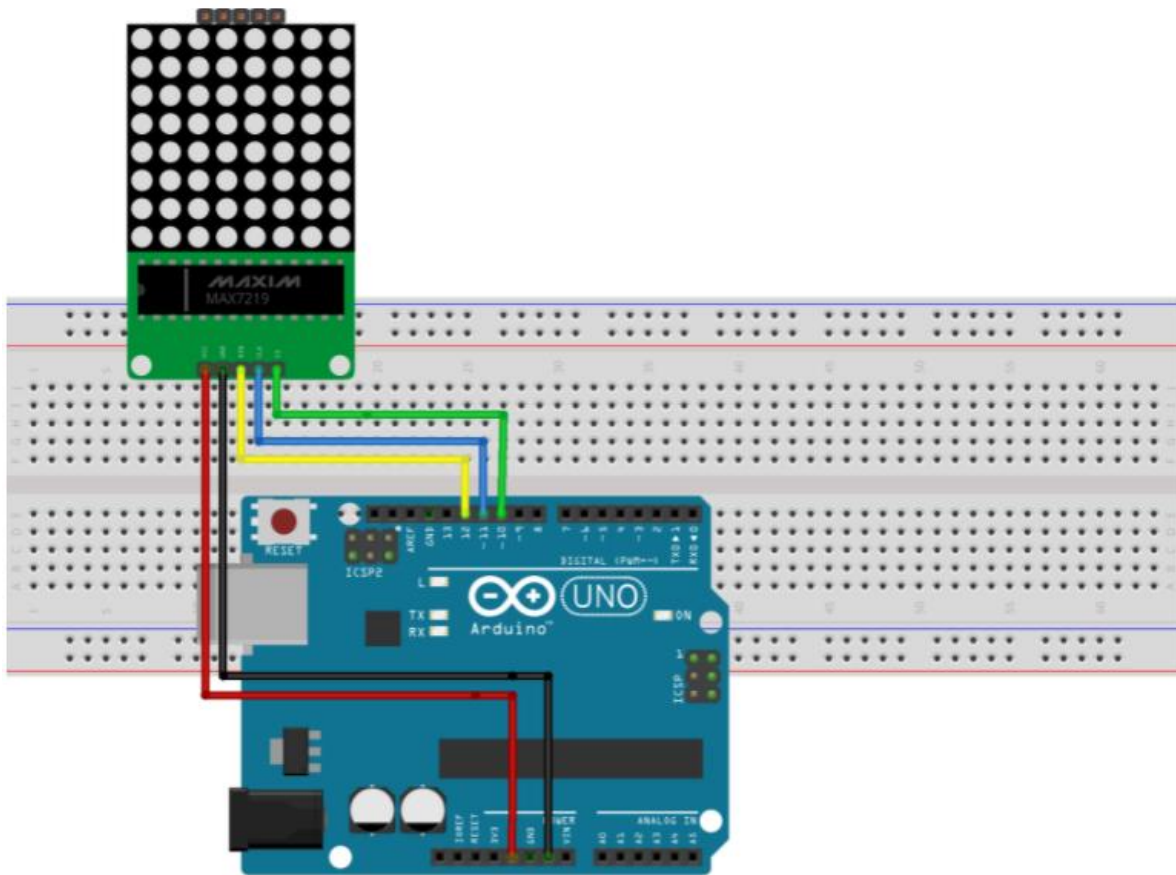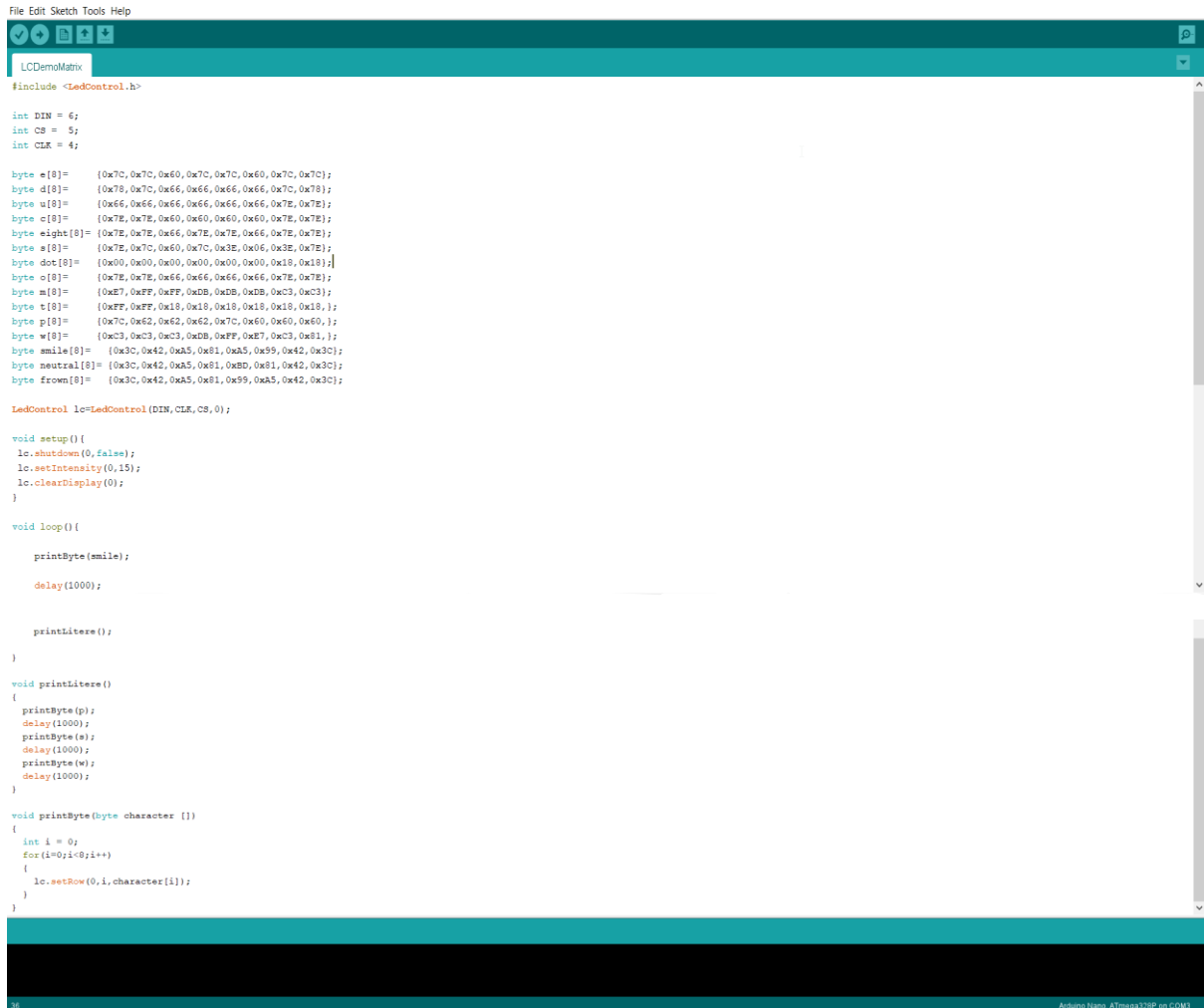
Proiect PSW

Arduino cu afisare LED

Scopul proiectului

Acesta este afisarea unor caractere pe display-ul LED. Pentru realizarea proiectului am folosit un Arduino Nano, un breadboard si un afisaj LED de tip matrice 8x8.

Circuitul

Codul

Explicarea codului

La inceput am instalat libraria LedControl si am inclus-o in cod

#include <LedControl.h>

Am declarat pinii de la Arduino care sunt conectati la matricea LED

int DIN = 6;

int CS = 5;

int CLK = 4;

Am declarat lista de octeti care reprezinta un caracter pentru a fi afisat

byte e[8]=   {0x7C,0x7C,0x60,0x7C,0x7C,0x60,0x7C,0x7C};

byte d[8]=   {0x78,0x7C,0x66,0x66,0x66,0x66,0x7C,0x78};

```
byte u[8]=    {0x66,0x66,0x66,0x66,0x66,0x66,0x7E,0x7E};
byte c[8]=    {0x7E,0x7E,0x60,0x60,0x60,0x60,0x7E,0x7E};
byte eight[8]= {0x7E,0x7E,0x66,0x7E,0x7E,0x66,0x7E,0x7E};
byte s[8]=    {0x7E,0x7C,0x60,0x7C,0x3E,0x06,0x3E,0x7E};
byte dot[8]=  {0x00,0x00,0x00,0x00,0x00,0x00,0x18,0x18};
byte o[8]=    {0x7E,0x7E,0x66,0x66,0x66,0x66,0x7E,0x7E};
byte m[8]=    {0xE7,0xFF,0xFF,0xDB,0xDB,0xDB,0xC3,0xC3};
byte t[8]=    {0xFF,0xFF,0x18,0x18,0x18,0x18,0x18,0x18,};
byte p[8]=    {0x7C,0x62,0x62,0x62,0x7C,0x60,0x60,0x60,};
byte w[8]=    {0xC3,0xC3,0xC3,0xDB,0xFF,0xE7,0xC3,0x81,};
byte smile[8]=  {0x3C,0x42,0xA5,0x81,0xA5,0x99,0x42,0x3C};
byte neutral[8]= {0x3C,0x42,0xA5,0x81,0xBD,0x81,0x42,0x3C};
byte frown[8]=  {0x3C,0x42,0xA5,0x81,0x99,0xA5,0x42,0x3C};
```

Initializam libaria de control a LED-urilor prin creerea unui obiect al librariei

```
LedControl lc=LedControl(DIN,CLK,CS,0);
void setup(){
lc.shutdown(0,false);     //modul power-save
lc.setIntensity(0,15);    // seteaza luminozitatea
lc.clearDisplay(0);       // curata diplay-ul
}
```

Functia printByte este folosita pentru a afisa caracterele stocate in listele de octeti, aceasa contine si un delay pentru a vedea corect carcaterul inainte de a afisa altul. Aceasta functie este incadrata in functia loop care este o bucla infinita.

```
void loop(){
printByte(smile);
 delay(1000)
printLitere();
}
void printByte(byte character [])
{
int i = 0;
for(i=0;i<8;i++)
```

```
        {
        lc.setRow(0,i,character[i]);
         }
        }
```

Functia printLitere are rolul de a afisa un sir de caractere(in cazul de fata: P, S, W) cu o intarziere de o secunda

```
        void printLitere()
        {
        printByte(p);
        delay(1000);
        printByte(s);
         delay(1000);
        printByte(w);
        delay(1000);
        }
```

Link

https://youtu.be/nwpNHmUNHhc